

Becoming a skilled investigator: © Kath Murdoch 2009

Learning to investigate is a key feature of inquiry based approaches. Each unit of inquiry should be seen as an opportunity to develop students' **skills in methodologies that researchers use** to gather information they need in response to questions or problems they or others have posed. In fact, good inquiring classrooms 'positions' students AS researchers – they see themselves as active investigators.

The role of the teacher in this process is critical. Whilst there are skills common to all, Each method of gathering information brings with it a specific set of skills that need to be carefully modelled and specifically taught in order for students to become increasingly independent in their use. In the 'shared' or 'guided' phase of a unit of work, these methods can be taught and revised – adding to the repertoire students can select in the 'going further' or student led inquiry phase of the unit.

When students interact with texts and experiences at the 'finding out' phase – they are also developing their understanding of what it takes to create such a product – one that provides information to others. In this way, the finding out and concluding/expressing phase are strongly connected. For example, young students learning how to read a non fiction book to gather information also become acquainted with the structural features of such a text and are then better positioned to create their own.

In the model for inquiry I use, the following methods are most often used at the 'Finding out' phase of the unit. Within this phase, there are some important 'moves' the teachers and students needs to make:

1. **Establishing which resource might be the BEST** resource for this particular investigation. Students become better at this when they are regularly required to reflect on and evaluate the resources they used in each inquiry. Students should be as involved as possible and practical in the organizing and locating of resources.
2. **Constructing and refining questions** or subtopics for investigation. In other words, the investigation phase is enhanced if students know what they are looking for – not simply finding out about a 'topic'
3. **Critical evaluation** of the quality of the resource itself – this is particularly relevant to the use of web-based resources
4. **Note taking and note making** during/after an encounter with the resource – learning different formats for note taking is a vital part of investigation and, again, needs to be explicitly taught
5. **Comparing, contrasting and connecting** information from different sources. Here's where the 'sorting out' begins and we move into the next phase of the process.

Remember – gathering the information is only the first step towards understanding, It is the analysis and synthesis that helps deepen students' thinking.

The following table identifies some commonly used methods for investigation and some of the skills needed to use this method effectively

Research method....Finding out by....	Sample skills required
<i>Reading non fiction books and other printed texts (pamphlets, posters, charts, magazines, reference books etc)</i>	<ul style="list-style-type: none"> • Selecting a relevant book/article • Skimming and scanning and selecting relevant information • Using structural features of the texts – headings and subheadings, content and index • Critically evaluating the ‘trustworthiness’ of the source • Note taking and note making • Interpreting/comprehending the text • Comparing and contrasting to other forms of information • Organise and display information gathered (using, for example, appropriate visual organizers)
<i>Direct observation (of phenomena, a demonstration, an object, during an experiment)</i>	<ul style="list-style-type: none"> • Clarifying what is being ‘looked for’ • Staying focused and avoiding distraction • Designing effective methods to record observations • Recording information in quick and efficient manner • Describing observations to others • Reviewing the experience – identifying discoveries and wonderings •
<i>Accessing information via web-pages</i>	<ul style="list-style-type: none"> • Using search engines – narrowing searches to find most relevant information • Evaluating the trustworthiness of the site by identifying the author/source/sponsor • Locating evidence of accountability (where does the author get the information from?) • Making connections between information from multiple web sources • Articulating and summarizing information in own words • (see used of non fiction books)
<i>Interviewing someone to gather information (1-1, small group or listening to guest speaker, talking to a buddy)</i>	<ul style="list-style-type: none"> • Formulating appropriate questions (open and closed) • Using respectful body language and eye contact • Actively listening without interruption • Using probing and clarifying questions • Recording information gained in an efficient and concise way • Using protocol for interviews (permission to use material etc)
<i>Letter/email to seek information</i>	<ul style="list-style-type: none"> • Using conventions associated with both formal emails and letters. • Framing appropriate questions suited to the focus of the investigation • Comprehension of material sent in response
<i>Designing and conducting surveys</i>	<ul style="list-style-type: none"> • Identifying the information that needs to be gathered • Designing, producing and evaluating a format that will enable efficient and effective gathering of data • Analysing data – looking for patterns • Drawing conclusions based on data received • Refining the survey based on trial

<i>Experiments/simulations</i>	<ul style="list-style-type: none"> • Using materials safely • Hypothesising/ predicting possible outcomes • Identifying variables and designing a fair test • Recording information gathered systematically (may be using a the genre of a scientific report) • Analysing and concluding based on observations or data gathered
<i>Viewing videos/dvds/film clips/photos</i>	<ul style="list-style-type: none"> • Selecting a relevant visual text • Skimming and scanning and selecting relevant information • Critically evaluating the 'trustworthiness of the source • Identification of the text features used to communicate information – colour, sound, animation, casting, music etc) • Note taking and note making • Interpreting/comprehending the text • Comparing and contrasting to other forms of information • Noticing and recording detail
<i>Using real objects and artefacts</i>	<ul style="list-style-type: none"> • (see direct observation)
<i>Phone calls/skype/webcam</i>	<ul style="list-style-type: none"> • • (see interview skills plus specific skills associated with the technologies being used)
<i>Audio files (music, songs, broadcasts, podcasts)</i>	<ul style="list-style-type: none"> • Active listening for relevant information • Recording and summarizing information gained • Skimming and revising the text to review information • Critically evaluating the trustworthiness of the source and the 'agenda' of the composer/producer • Note taking and note making • Analysing and comprehending information
<i>Using literature (fiction)</i>	<ul style="list-style-type: none"> • Selection of texts appropriate to the concepts/questions being explored • Identification of themes and ideas that connect to investigation foci • Identifying fact vs fiction • Making connections between texts